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Citizens' Bulletin

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Sanctuary shows off State flower

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Cover Photo: Jenny Mead

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Why nature-lovers like unspoiled Huntington State Park

By John Waters

Collis P. Huntington State Park, which spreads its woods, wetlands, ponds, and lakes over 832 acres of Redding, Newton, and Bethel, offers unspoiled nature as its stellar attraction. Willed to Connecticut by nature-loving relatives of the railroad tycoon it is named after, it was once the domain of an Indian chief named Chicken Warrups.

The Huntingtons made its perpetuation as an undeveloped nature preserve a condition of their gift, so the State has refrained from adding many of the facilities associated with parks. Nevertheless, it attracts people who enjoy hiking, birding, fishing, nature study, picnicking, canoeing or rowing, horseback riding, and cross-country skiing. There are more than seven miles of work roads and YCC-built trails. Cross-country skiing is especially good because of the variety of terrain.

Birders should not be too surprised to see pied-bill grebes, mallards, Canada geese, rare red-shouldered hawks, screech owls, pileated woodpeckers, bluebirds, parula warblers, black-throated blue warblers, Blackburnia warblers, pine warblers, worm-eating warblers, Wilson's warblers, and northern water-thrush warblers. Also northern orioles, scarlet tanagers (between the middle and end of May), purple finches, indigo buntings, rose-breasted grosbeaks, flycatchers, and black ducks. Deer sightings are not infrequent.

As for flowers, lady-slippers are fairly common; and in August and September, the cardinal flower may be seen in damp areas.

The entrance to the park is on Sunset Hill Road in West Redding and is the site of two bronze sculptures by Anna Hyatt Huntington. One is a pair of howling wolves; the other is a mother bear with two standing cubs. The parking lot is free but small, holding only 30 to 40 cars. The park is open all year, from 8 a.m. to sunset.

Nine No-Nos

No camping. No hunting. No cooking. No snowmobiles. No unleashed dogs. No outboards or motor boats. No motor vehicles of any kind except for State-authorized wood cutting. No wood cutting without a permit.

Questions about the park should be directed to the Region II office of the Department of Environmental Protection, 251 Judd Hill Road, Middlebury, Conn. 06762. 203-758-1753. Or to the Park Manager, 203-938-2285. To get there:

From North
Leave US 84 at Exit 10. Take US 6 west a short way into Newtown, where you turn left onto State 25. Take 25 a short way to State 302. Turn right onto 302 and take it through Dodgingtown to its intersection with State 58. Turn left onto 58 and go south 1.3 miles to its intersection with Sunset Hill Road, which will be on your left. Turn onto Sunset Hill Road and go south about 2.5 miles until, on your left, you see two pedestals with bronze sculptures of wolves and bears. This is the entrance to the unpaved parking lot. No road parking is allowed.

From South
Leave Merritt Parkway (State 15) at Exit 45. Take State 58 northwest about 10 miles to its intersection with State 107 in Redding Ridge. Continue on 58 for about 0.7 miles to Sunset Hill Road, which goes off to the right. Take it until, on your right, you see two pedestals with bronze wolves and bears at the entrance to the unpaved parking lot. No road parking is allowed. ■

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T.N. Wynne photos

Trawling for benthic and demersal species such as flounder, lobsters, squid, and sea stars, aboard the "R/V OCEANIC".

Oceanic Society offers close-up look at subtidal life of Long Island Sound

By Nigel L. Bowers, Educational Programs, Oceanic Society

Northeast School
Stamford, CT 06903

May 23, 1980

Dear Skip and Nigel;

Thank you for that trip even if it was wet. I like the way Nigel threw the fish at the sea gulls while Skip was telling us about the equipment and the captain was doing all the hard work.

Sincerely,

Mark Sweat

The above letter from a fourth grader is typical of students' responses to the Oceanic Society's Study Cruise programs aboard its research/education vessel the "R/V Oceanic." For each individual, student or adult, the experience is unique. Whatever his or her particular interest, be it measuring flounder, sifting through the smelly mud of Stamford harbor, hypnotizing lobsters, watching Skip Crane's deft dissections of a squid, or helping Captain Ray Doane navigate safely home again, the program participant rarely lacks for educational entertainment aboard these three-hour long study cruises.

The goal of these cruises is to introduce the student to subtidal life forms of Long Island Sound and at the same time give him or her the opportunity to participate in an ongoing biological survey of the organisms in the water between Greenwich and Norwalk. Cruises are regularly scheduled for three or four hours, leaving the dock at Yacht Haven East in Stamford at 9 a.m. or 1 p.m., though special arrangements can be made to accommodate groups for different lengths of time. A typical three-hour trip is the following.

9:00 a.m. The first half hour of the trip is usually spent boarding the group and getting under way to the first sampling site, the mouth of Stamford harbor just inside the breakwater.

9:30 a.m. Sampling begins. Volunteers are called upon to take water samples and sample the substrate. On the starboard side amidships, Crane supervises the water sampling. Two samples are taken, one of surface water, the second of the bottom water. Once samples are on board, the group in the stern, under the watchful eye of educational programs director Nigel Bowers, lowers the oyster dredge. This piece of equipment is a small version of the dredges used by commercial oyster men to harvest oysters. On a hard bottom, the dredge is designed to skim the surface picking up the benthic epifauna (organisms living on the bottom), primarily oysters. In the soft muds of Stamford harbor, the dredge digs into the sediments as it is dragged along, sampling the epifauna and collecting a sample of the sediments to be sifted through for infauna (organisms living within the sediments), particularly mollusks and worms.

As soon as the dredge is back on board with its load of evil-smelling mud, the captain sets a course for the Norwalk Islands. During the 40-minute trip to the Islands, mud flies. Everyone is up to his or her elbows in black muddy water as they sieve through the ooze for life forms. The results are surprising. Out of the ooze emerges an abundance of life: hermit crabs, mud crabs, an occasional spider crab, hard shell clams, Yoldia (one of the most active bivalve mollusks), the New England dog whelk (the mud snail's subtidal counterpart), and countless marine worms and worm tubes. All of the organisms are collected and discussed until the vesel arrives at Norwalk. All the mud on board must then be washed back over and the decks swabbed down before the next activity can begin.

10:30 a.m. Once the boat is clean again, the otter trawl is put out. This net is used by commercial fishermen to gather benthic and demersal organisms. It is shaped like a compressed funnel and is dragged behind the boat at idle speed so that it scrapes along the bottom. Once again, volunteers are called upon to let the net out and then, after a 15 minute tow, to haul it back in again. The net is pulled aboard, the cod end opened, and the catch dumped onto the sorting table amongst the "oohs" and "ahs" of a totally attentive group.

The organisms are then carefully sorted. Lobsters, crabs, and other things that might do damage to an untrained hand are removed before passengers are allowed to help. All organisms are identified, and the data is recorded by the students while the "R/V Oceanic" is en route to Wescott Cove for a second trawl. Lobsters and flounder are sexed and measured; other arthropods are sexed and recorded. Fish such as bergalls, blackfish, squirrel hake, and sculpins are identified, discussed, counted, and slid back over the side. Some specimens of particular interest are kept for the tanks at the Marine Center and others for dissection during the return trip.

11:15 As the boat arrives in Wescott Cove, the trawl is set, dragged and retrieved once more. Again, all the organisms are discussed, and the data is recorded. The catches are compared on the way back to Stamford. Once inside the harbor, with the recording completed, a plankton net is used to obtain plankton for observation while, for the less squeamish, a squid or flounder is sacrificed for dissection and subsequent feeding to "Bruce" (the toadfish), "Taut" (the blackfish), and the other marine life in the resources room back at the Stamford Marine Center.

12:00 noon. The boat returns to the dock, and the group reboards its bus to be whisked back to school.

The Oceanic Society is a national, non-profit membership organization working to focus public attention on the marine environment through education, conservation, and research programs. On the national

Students dredge for oysters and other benthic fauna aboard the "R/V OCEANIC".

level, the society publishes a membership journal, "OCEANS" magazine, six times a year; sponsors environmental analysis and action efforts; and coordinates a global expeditions program. On the local level, at the National Headquarters in Stamford, the society offers a wide range of educational programs for school, civic, and other groups.

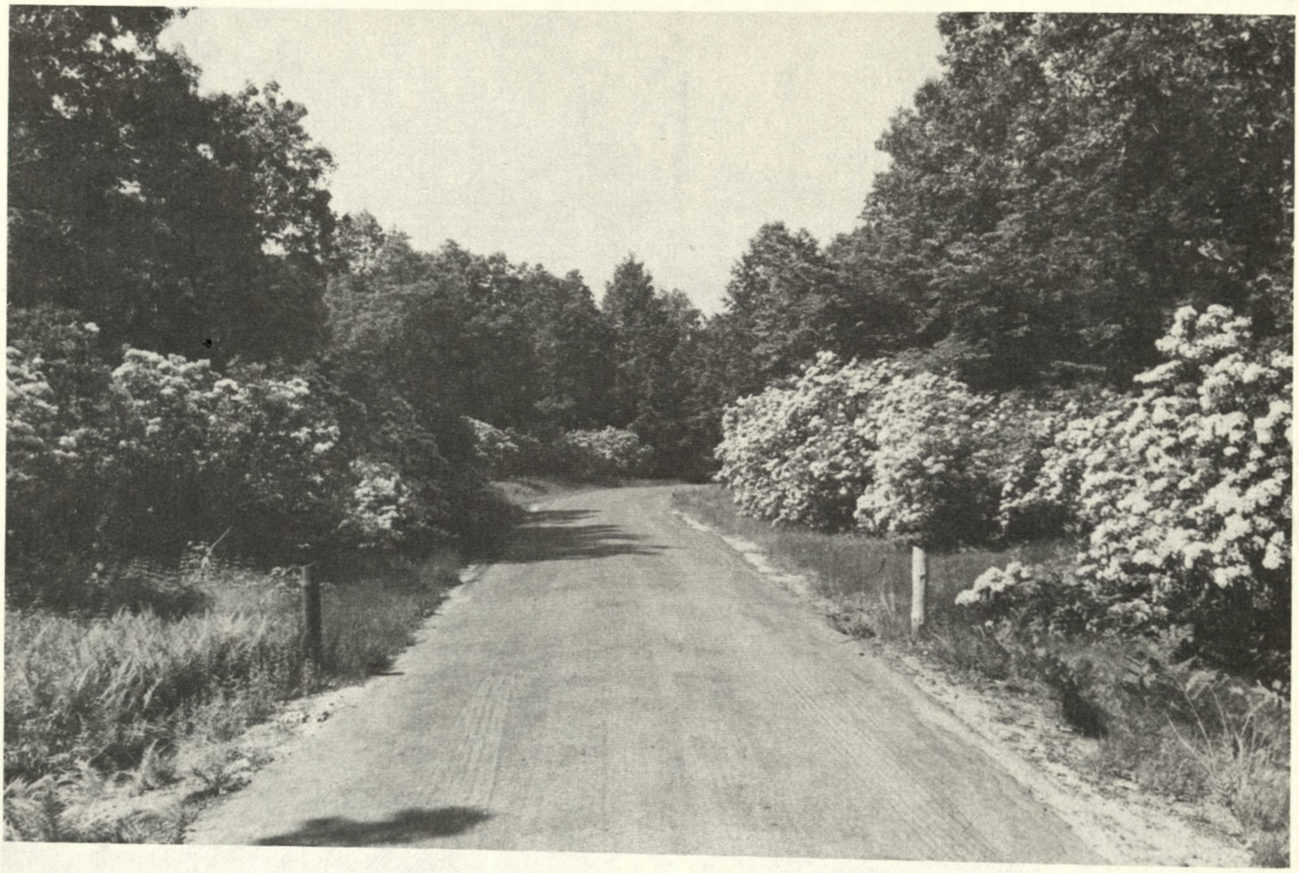
Study cruises, like the one described above aboard the "R/V Oceanic," are just some of a wide variety of programs available. Others include intertidal field studies; coastal walks; lectures, slide shows, and live marine animals demonstrations in schools or at the Stamford Marine Center.

The facilities at the center include a large lecture room, classroom, working water quality lab, and marine resource room. The resource room now contains a 250 gallon refrigerated touch tank, flow through work table, and numerous marine aquaria. It is open to let the public view a wide variety of Long Island Sound organisms as well as to provide a fabulous opportunity for students to observe and handle the different marine life forms year around.

Last summer the society ran its first sea camp: four two-week sessions for children aged 8 to 13. The camp focuses on the marine environment through trips to Mystic Aquarium, South Street Seaport, and a sewage treatment plant, along with cruises on the "R/V Oceanic," intertidal studies, and activities like algae pressing, fish printing, aquarium maintenance, and a "fish fry-day." The camp was very well received last year and is filling up fast for this summer.

A series of lectures, seminars and courses is also offered at the Stamford Marine Center by the Long Island Sound Taskforce (LIST). The Taskforce, as the regional chapter of the Oceanic Society, focuses its attention on the estuarine environment of Long Island Sound as a single natural system. Through its Soundwide Environmental Caucus Program, LIST sponsors conferences, workshops, and waterfront festivals and involves itself in environmental issues affecting the Sound through advocacy and education.

For more information on the Oceanic Society, its educational programs, Sea Camp '81, and the Long Island Sound Taskforce, please contact the Stamford Marine Center, Magee Avenue, Stamford, CT 06902; (203) 327-9786. ■



Jenny Mead photos

Nipmuck sanctuary should please lovers of mountain laurel

Lawrence Lucay oversees Nipmuck Forest's laurel sanctuary.

By Jenny Mead, Massachusetts Audubon Intern

Driving along the roads of Connecticut in late June or early July, you'll see splotches of pink and white, the characteristic color of Connecticut's State flower, the mountain laurel. Growing primarily in rocky woods or swamps throughout the East and Midwest, mountain laurel, or Kalmia latifolia, prefers acidic soil. While its clustered buds range in hue from white to purple, its leaves are a hairless, flat, leathery, dark green with a light green backing.

An interesting place for those who particularly like mountain laurel is the DEP Forestry Unit's Laurel Sanctuary, located in the Nipmuck State Forest, on Route 190 in the Town of Union. The sanctuary consists of a two-mile, horseshoe shaped route which takes the visitor, on foot or by car, along roadsides speckled with laurel bushes into an extended thicket of the plants.

Open 24 hours a day year-round, the sanctuary is under the supervision of Lawrence Lucay, who oversees the maintenance and upkeep of the area. Lucay, who works with two other full-time and several part-time staff members, has been with the Shenipsit State Forest in several capacities since 1941. His duties, aside from supervising the sanctuary, include flood control; forest, road and bridge repair; firefighting; and stocking fish. But Lucay takes particular pleasure in watching over the laurel, saying, "I like to see things kept up, so the public can enjoy them."

On State property maintained by the DEP's Region III, the sanctuary had its beginning in the early 1930s, when the Civilian Conservation Corps, operating out of nearby Camp Graves, began to develop the abundant laurel in the area. After the CCC was dissolved in 1942, crew members from Shenipsit worked to turn the area into a real sanctuary. To do so, they cut back the trees and brush along the roadside, allowing the laurel to stand on its own.

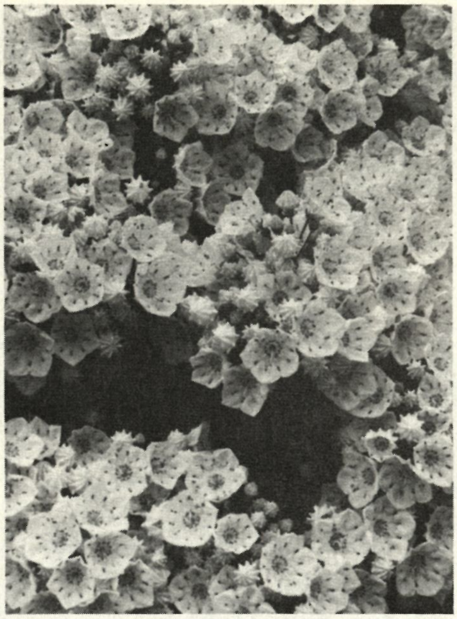
The laurel blooms from the middle of June until early July, reaching the height of its beauty about a week after the blossoms first appear. This peak lasts approximately one week, and then the petals begin to drop and the blooms fade. During this time, says Lucay, both in- and out-of-State visitors, some from as far away as Florida, flock to see the plants. In the "off-season" when the blooms are gone, leaving only green shrubs, the sanctuary is a good place to hike or merely to sit quietly and keep an eye open for raccoons, porcupines, deer, flying squirrels, or other wildflife which roams the area.

Like many other flowering plants, the mountain laurel's beauty is not consistent from year to year. Roughly every three years, says Lucay, the flowers are particularly abundant and beautiful; however, the cycle is unpredictable. One factor contributing to a bad year is the amount of windburn which the laurel receives during the winter. Although the sanctuary's plants are somewhat protected by surrounding trees, the high altitude of the sanctuary makes them more susceptible to wind drying.

Laurel is a hardy plant, and consequently the sanctuary does not need a great deal of maintenance. The Shenipsit workers give the area an annual spring cleaning, cutting back the brush and clearing out dead branches and rubbish from the roadsides. Stopping the advancing brush used to be handled by spraying; today, sprays are not used, and the brush must be chopped away. Skyrocketing gas prices now make it too expensive to mow the borders of the sanctuary, and the result, says Lucay, is an unkempt appearance. However, straggling grass along the edge of the road hardly destroys the beauty of the sanctuary.

A drive through Laurel Sanctuary reveals more than blooming laurel plants and wildlife peering out from among the trees. In the early 1800s, much of the land which makes up the state forest was settled, and remnants of these farms still exist. Sections of stone walls are visible along the roadside, and parts of houses remain. At one point along the drive you can find the foundation of a stone house with the chimney within still standing. Stones are all that is left of these farming communities; poor soil made it extremely difficult to raise either livestock or crops, so the farm families gradually left the area. Also dotting the forest are narrow water-holes, built by the CCC for fighting forest fires. These water-holes look like small ponds, but they generally hold eight to ten thousand gallons of water, with some holding as much as 20,000 gallons.

The beauty of the laurel blossom hides a darker side of the laurel plant. Both the leaves and honey made from the plant contain andromedotoxin, which is very poisonous to humans and to most animals, causing convulsions and paralysis in those who eat any part of the plant. During the 1800s, many sheep raised by farmers died after eating laurel leaves. ■



Planting seeds of mountain laurel

By Lois Kelly, Director, James L. Goodwin Conservation Center

The seeds of Connecticut's State flower, the mountain laurel (Kalmia latifolia), ripen in September and October. Pick capsules then. Dry, if necessary. Rub or beat capsules to open; shake out seeds. Seeds can be stored at dry room temperature.

Germination: sprinkle seeds, uncovered, onto moist sand, peaty soil, or moss. (A terrarium should be ideal!) Place in light, but not sun, and keep moist, not wet.

The chance of germination is increased fivefold if seeds are exposed after sowing to outdoor winter temperatures (such as in a coldframe) for two to three months. After this exposure, germination will take one to two months (42 days was the average in some tests).

As soon as they are large enough to handle, seedlings should be planted in pots for their first year of growth. Transplant into temporary beds for the second year, then to a permanent location.

Not an occupation for the impatient!

Leonard Lee Rue III photos

America's only marsupial, opossum is 20th Century immigrant to Connecticut

By Mark Clavette, Wildlife Biologist Assistant

As I rounded a curve along Route 85 in Hebron, I slowed to a near halt, anticipating a maneuver around an object standing motionless near the shoulder of the highway. The morning fog was beginning to disperse, and I sensed movement in this thing which was blocking my path. Stopping the car, I watched closely as a furry critter resumed its slow awkward gait and headed toward the opposite shoulder.

The Virginia opossum (Didelphis virginiana) is a relative newcomer to resident wildlife populations in Connecticut. Nearly absent from New England until the 1900s, the opossum is now commonly sighted along highways and country roads throughout Connecticut. A native to Southern states, the opossum has expanded its range northward to include Connecticut, Massachusetts, Rhode Island, and southern Vermont and New Hampshire.

The opossum is the only American representative of the animal order Marsupialia. The features that distinguish the opossum from other major groups of animals are its unique reproductive characteristics. Like the kangaroo of Australia, the female opossum gives birth to several undeveloped young which must continue development within a protective pouch called a marsupium on the mother's abdomen.

Opossums are capable of breeding two to three times per year from January to July. About 13 days after mating occurs, the female gives birth to five to 13 young. These embryo-like offspring are approximately one-half inch long and are not developed, except for well-defined mouth parts and front legs. Naked, blind, and helpless, they begin a perilous journey to the mother's pouch by grasping the female's underfur and climbing slowly upward.

Once within the protection of the marsupium, the newborn opossums attach themselves to a nipple within the pouch where they will continue to be nourished and grow rapidly for about two months. At this point the eyes open, and the now fully-furred young begin to venture outside the pouch for short periods of time, often clinging to the mother's back. At about three months of age the juvenile opossum is capable of surviving on its own and leaves the mother as she once again begins the reproductive cycle.

The adult opossum is about the size of a large house cat, with a more rounded body and shorter legs. A whitish face with pointed snout and small beady eyes contrasts with a grayish-black body. The tail is long and sparsely covered.

A highly adaptive species, the opossum inhabits a wide variety of habitat types throughout Connecticut but seems to prefer farmland adjacent to wooded areas. Opossums make their homes in almost any natural opening including hollow logs or rock ledges and have been known to use abandoned dens of other wildlife.

The opossum is mainly nocturnal and is seldom seen during the daytime. It is omnivorous and will consume almost any type of food including carrion, fruits, vegetables, and nuts when available. As a scavenger, it may travel considerable distances along roadways and in open areas in search of dead animals upon which to feed. Clumsy and awkward in motion, the opossum may fall prey to hawks, owls, and other raptors and is often a victim of the automobile.

The opposum is noted in folklore for its instinctive ability to feign death or "play possum" when threatened or endangered. This response is in accord with the animal's rather timid nature, for it prefers to flee from pursuers rather than risk a confrontation. "Playing possum" may be a passive defense from predators and a survival adaptation or it may be the result of physical shock. The passive nature of the opossum should not be overemphasized, however, as it is equipped with numerous large teeth which could easily be an advantage in defensive behavior.

I rarely have the opportunity to observe the opossum in Connecticut, and my brief roadside encounter with the furry critter added something memorable to an otherwise ordinary day. I haven't met up with that opossum again, but the chance will always be around the next bend in the road for the Virginia opossum is in Connecticut to stay. ■

Huntington State Park honors peddler whose railroads spanned U.S.A.

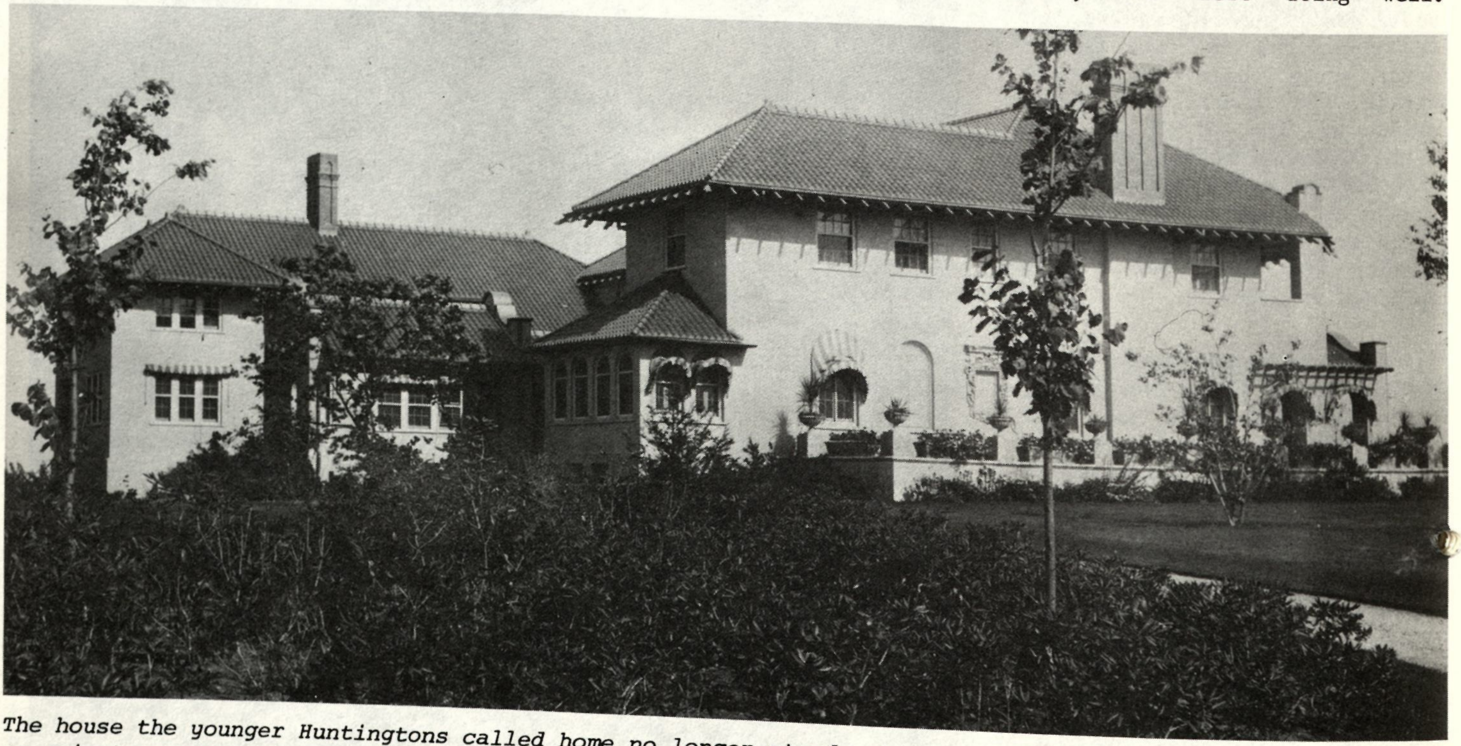
By John Waters

Redding's tranquil but little-known Collis P. Huntington State Park is named after a famous railroad builder and transportation millionaire who was born into abject poverty only thirty miles away in the Poverty Hollow section of Harwinton, 160 years ago. Huntington was one of nine children of hard-working but luckless parents who never could make ends meet. They were so destitute that when Collis was 13, Harwinton's selectmen high-handedly took him and a brother away from their parents and put them out to work for local farmers.

Yankee Peddler

The Big Spender to whom Collis was assigned paid him $84 a year, with room, board, clothing, and washing thrown in. Collis, who in later years boasted, "No one can trace me from the quarters I drop," must have learned tight-fisting from his Yankee employer because he saved every penny of the $84.

When he was 15, with a $100 bankroll and a small stock of merchandise, he set out with a pack on his back, peddling from door to door until he reached Woodbury. There he got a job peddling dry goods from a wagon. A year later, he set out again on his own, first on foot, six months later on horseback, and finally in a covered wagon. By the time he was 22, he and his brother Solon owned a country store near Oneonta, New York, and were doing well.

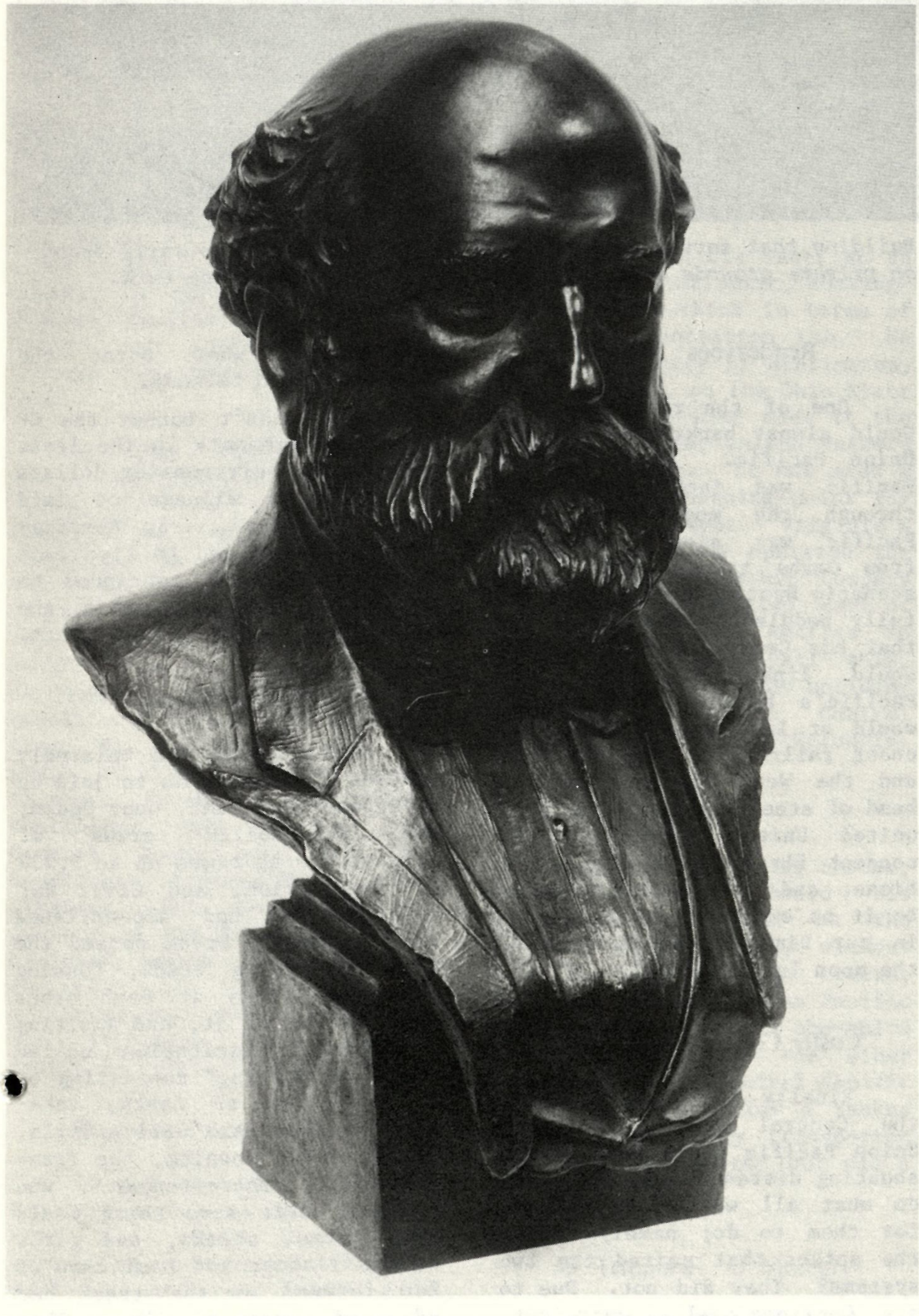


The house the younger Huntingtons called home no longer stands, but some of its outbuildings are visible on private property adjoining the park.

Gold Rush

Collis was 27 when California's Gold Rush started. Seeing it as an opportunity for business, he rounded up an assortment of merchandise that would be needed out there and shiped it to California in 1848. Then, in 1849, he sold out his interest in the Oneonta store for $1,200 and took a ship to the east coast of Panama, planning to cross the 24-mile isthmus and take another ship north to San Francisco.

When he reached Panama, he learned there would be no northbound ship for three months. Not a man to fritter time away -- he neither smoked nor drank -- he set up as a Yankee peddler again, tramping across the malaria-ridden isthmus at least 20 times. By the time the ship for San Francisco showed up, his $1,200 had grown to $5,000. He went from San Francisco to Sacramento, where he established a prosperous hardware business. Later, he and Mark Hopkins went into partnership in hardware and furnishings for 24 years and made their firm the wealthiest on the coast.



Collis P. Huntington, bronze by Anna Hyatt Huntington, courtesy of The Mariners Museum, Newport News, Virginia.

Crazy Idea?

In the late 1850s, a railroad construction engineer, Theodore Judah, from Bridgeport became convinced a railroad could be successfully built eastward through the formidable passes of California's Sierra Nevada Mountains. This earned him the nickname of "Crazy Judah" when he sought financing from San Francisco's businessmen, who were quite content with the 24 percent their money was earning without risk. Judah then tried Sacramento. Huntington and Mark Hopkins, seeing the profit opportunities in a railroad connecting the Coast with the East, put up the capital Judah needed to survey routes through the mountains. Huntington then lined up Governor Leland Stanford for his political contacts in California and Washington and also a big, hard-driving construction man named Charles Crocker. The four formed Pacific Associates and put up $1,500,000 for the Central Pacific Railroad.

Money Gets Money

Huntington, with $100,000 in seed money in his pocket, took off for Washington to seek a Federal charter for the Central Pacific. When he returned, the $100,000 was gone, but the charter was in the bag. In the bag with it were a grant of 9,000,000 acres along the future right of way and a subsidy worth $24,000,000 for building the line from the Coast to Utah. The subsidy guaranteed Central Pacific $16,000 a mile for construction in flat country and $48,000 a mile for mountain country. This was a strong incentive to run through as much mountain country as possible.

Huntington, the prime mover of the Big Four, then issued $27,000,000 in bonds and peddled them to towns, counties, and states in the region. Any town reluctant to buy was assured that the railroad would not run through it. That usually clinched the sale.

The Impossible Dream?

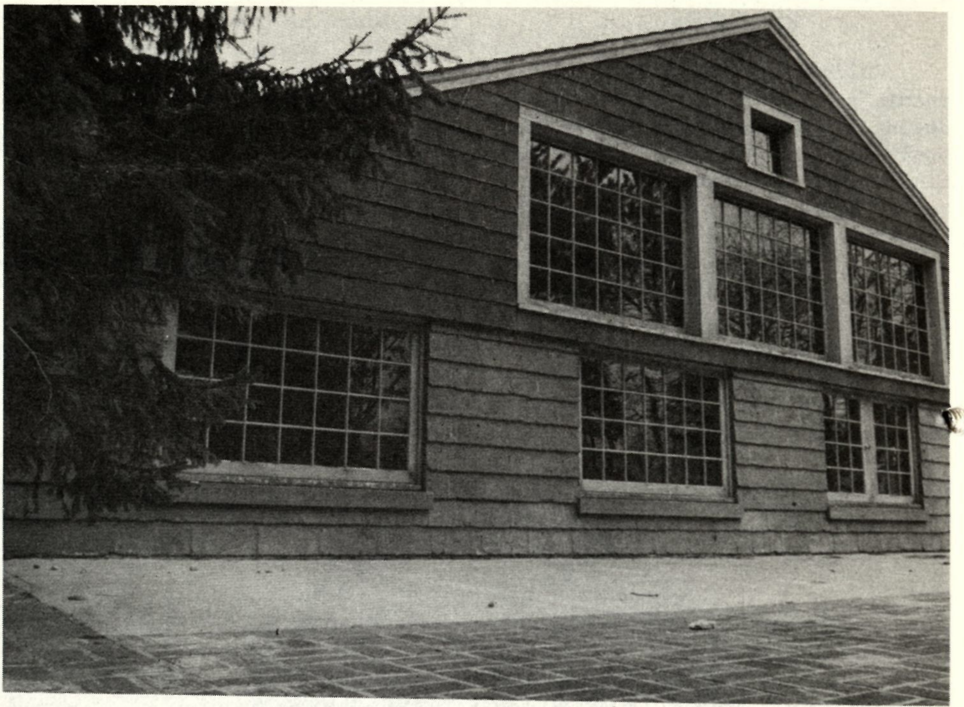
Governor Stanford, one of the partners, ceremonially turned the first shovelful of earth for the line on January 8, 1863. That was the only easy action involved in building the Central Pacific. The physical difficulties and weather conditions confronting the engineers and work crews were terrifying: mountains with thousand-foot cliffs and snow thirty feet deep, scorching deserts, deadly winds, roaring torrents that had to be bridged, and rock slides that swept workmen and newly laid track off cliffs or buried them in snowbanks until spring thaws revealed the bodies and wreckage.

Primitive Tools

There were no pneumatic drills to cut away rock, no power shovels, no tractors, graders, or motor-driven trucks, pumps, or electrical generators. Tunnels had to be cut with hand drills or chisels, sometimes advancing only eight inches a day. To cut into cliffs, workmen had to be lowered on ropes or in baskets. The only assistance for the crews was dynamite or blasting powder, which they used up at the rate of 500 kegs a day. There were no radio weather reports; no helicopters to fly the injured to hospitals, and no hospitals.

Huntington's Eastern Front

Tough, perfectionist Crocker was in charge of this battle with rock, weather, deserts, unhappy workers, and Indians. Huntington, meanwhile, spent much of his time in the East, buying supplies, ordering locomotives (which had to be shipped around Cape Horn to get them to California), dealing with American and foreign financiers, and keeping an eye on the notorious Jay Gould and other predatory raiders who milked railroads of millions, or bilked them for billions.



Rosemary Gutbrod photos

Building that served as Anna Hyatt Huntington's studio still stands on private grounds adjoining Collis P. Huntington State Park.

Rendezvous Ahead

One of the railroads that Gould almost bankrupted was the Union Pacific. While Central Pacific was inching its way through the mountains, Union Pacific was slowly advancing from Omaha toward Utah. The scenario Huntington had successfully peddled in Washington was that his Central Pacific tracks would link up with Union Pacific's in Utah, and America would at last have a coast-to-coast railroad to tie the East and the West together with a band of steel, making it a truly united United States. This concept fired people's imaginations, and they looked forward to it as excitedly as Americans in our time looked forward to the moon landing.

Costly Congressional Goof

Finally the day came when the Central Pacific and the Union Pacific crews were within shouting distance. But did they do what all world was waiting for them to do; namely, drive the spikes that united the two systems? They did not. Due to a Congressional oversight, Washington had failed to specify at exactly what point the joining was to be made.

That didn't bother the CP and UP managements in the least -- because their subsidy dollars increased as mileage of laid track increased. So Huntington's CP continued to lay track eastward, and UP continued to lay track westward, with the two crews only yards part.

"Hell on Wheels"

Until Washington belatedly ordered the companies to join up at Promontory, Utah, near Ogden, the hard-boiled crews of Chinamen -- at times up to 9,000 of them--Irish, and Civil War veterans who had accomplished the Impossible Dream passed the time by laying track, tossing dynamite sticks at each other for the fun of it, and visiting a strange institution called "Hell on Wheels," consisting of a collection of tents, take-apart shacks, and Girls, Girls, Girls! Each morning, the free-wheeling entrepreneur who operated this sure thing would load tents, shacks, and girls onto a flatcar and haul them as far forward as the track had advanced during the day. Then he set up again so that lonesome young men could have a home away from home every night.

Golden Spikes

The actual driving of the two golden spikes that united the lines at Promontory on May 10, 1869, celebrated one of the greatest feats of engineering and human endurance the world has ever known. Historian Leland D. Baldwin said, "It was a moment whose thrill has never been duplicated in American history -- unless by VJ Day." He also reported that the two golden spikes were removed instantly . . . just in case.

The Empire Builder

The Big Four, who had brought off this magnificent feat with glory to themselves, had planned to sell the line for a fat profit. But there were no takers, so Huntington extended Central Pacific northward into Oregon and southward through Arizona and New Mexico to El Paso.

At the same time, Jay Gould, everybody's enemy, was trying to run his Texas & Pacific line from New Orleans to California in order to encircle the Union Pacific, which he no longer controlled. This would not have been good for Central Pacific, so Huntington decided to fight. There were only two usable crossings of the Colorado River in Arizona: one in the south at Yuma and the other farther north at Needles. Huntington, with an okay from General Grant and the War Department, grabbed Yuma. This strategy gave Huntington the nucleus of the Southern Pacific Railroad, which was to connect the Coast with the Atlantic by a warm-weather route free from the blizzards that delayed trains on northern routes.

Southern Pacific Is Born

To achieve this ambition, Huntington entered into a truce with his enemy Gould, who controlled Missouri Pacific Railroad and so could give Southern Pacific a connection to St. Louis.

Earlier, Huntington had picked up, as a personal investment, the Chesapeake & Ohio coal-carrying line. Now he extended it to Louisville and New Orleans and to the Atlantic, founding the city of Newport News, Virginia, so that Southern Pacific would have access to a salt-water terminal.

Always quick to smell a business opportunity, Huntington figured a trans-continental railroad at Newport News would attract Eastern and foreign ships, which would need maintenance or repairs, so he founded Newport News Shipbuilding & Drydock Company, where many famous ships have since been built, including the nuclear carrier "Enterprise."

Anchors Aweigh!

Having wet his feet, so to speak, in the Atlantic, Huntington began to think in terms of marine transportation too. He founded the city of Huntington, West Virginia, on the Ohio River at a location that made it the largest port for inland vessels in the country. It was also a natural rail shipping point for coal from West Virginia's mines. Later, he operated the Pacific Mail Steamship Company and finally controlled much of the shipping from America to Europe and Asia. All this, while he was still busy building railroads in Mexico, Central America, and British Columbia.

Nice Ride

At the peak of his career, Huntington could board his private railway car on the Atlantic seaboard and, without ever leaving his own tracks, ride all the way to the Pacific Coast, and then cross one-third of the country in the other direction on his Central Pacific tracks. Not bad for a Yankee peddler whose only transportation when he started out was a pair of shoes!

O Tempora! O Mores!

In the exuberant America of the second half of the Nineteenth Century, big business was a blood sport, with practically no holds barred by government regulations or frowned upon by an ethically squeamish public. Business practices that would lead to jail today were not only tolerated by the public but were applauded as evidence of go-getter enterprise. Be-spatted wheeler-dealers like Jay Gould, Jim Fisk, Commodore Vanderbilt, and Bet-A-Million-Gates were almost folk heroes.

Operating in this hard-ball league, Huntington played rough too. Like most men of great accomplishments, he made enemies and was accused of almost everything but horsewhipping his mother. Be that as it may, his joining the West Coast to the rest of the United States, with not one railroad but two, was a public service desirable at any price. He collected richly for what he gave, but what he gave worked; it helped to populate the West Coast and make its fertile lands and

Bear and cubs, at Huntington State Park entrance, are example of Anna Hyatt Huntington's animal sculptures. Her works can be seen in nearly 200 parks and museums.

natural resources accessible to all who could get up the fare or ride the rods under his freight cars. Also, in creating new businesses and in founding cities in Virginia and West Virginia, he brought jobs and prosperity to many beside himself.

Cultural Spinoff

Like many self-made millionaires of his era, Huntington -- who had had almost no schooling as a boy -- went in for education and culture in a big way, not only for himself but for others. He had good libraries in his numerous homes and is said to have known what was in the books. He traveled and studied in Europe and assembled a great art collection, which is now in the Metropolitan Museum of Art in New York.

He also endowed libraries. In fact, long before he was in the big money, he bought a crate of books for $29 in Sacramento and started one of the first free circulating libraries in California.

California also became the home of the Henry E. Huntington Memorial Library in San Marino, one of the world's greatest libraries for scholarly research. Henry was the son of Collis' brother, Solon, who remained in Oneonta when Collis took off for the Gold Rush. Henry went to work for his uncle and became extremely wealthy as his partner. He acquired one of the world's finest collections of American and English literature and paintings and of rare manuscripts. These are preserved in the library, which was Henry's mansion in San Marino. It is open to research scholars and includes the art gallery and botanical gardens. It houses 564,277 books, 600 periodicals, 16,000 microfilms, and 5,000,000 manuscripts for the use of scholars and educators.

Aided Negro Education

Born as poor as the poorest Blacks, and also having seen pre-war conditions in the South as a Yankee peddler, Collis Huntington found it easy to understand the need for schools that would help Negroes get ahead. He gave $50,000 to Tuskeegee Normal and Industrial Institute in Alabama, and his money helped build Hampton Institute in Virginia.

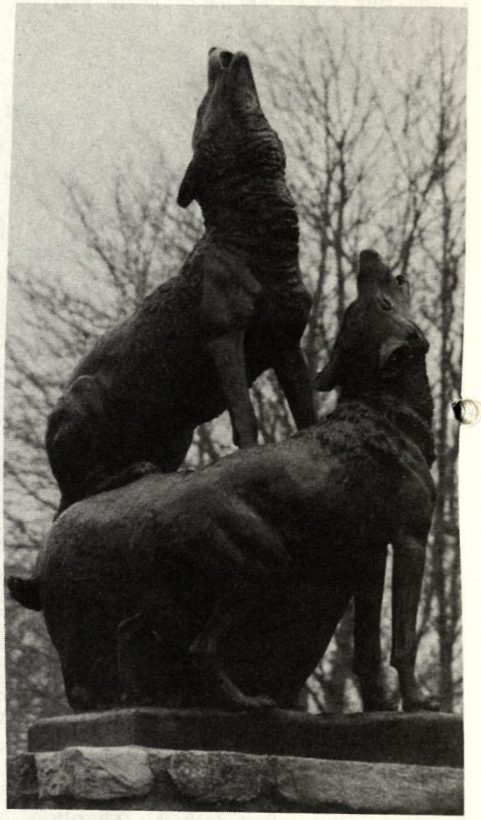
A Son

Another action of Collis Huntington that indirectly enriched the artistic and cultural life of America and helped launch the conservation movement stemmed from his desire to have a worthy son and heir. Collis' first marriage had produced no children. When his wife died in his sixty-ninth year, he married a highly cultured widow, Arabella Duval Yarrington Worsham, who had a 20-year-old son, Archer.

A broad-shouldered, six-foot-five intellectual fluent in Spanish, Arabic, and French and well on his way to becoming an expert in Hispanic history and culture, Archer was as different from Collis as any man could be. But one of Collis' talents was his ability to evaluate men, and he knew a thoroughbred when he saw one. So he adopted Archer, always called him his son, and hoped to turn his business empire over to him.

As Archer Huntington, the young man dutifully gave business a real college try and displayed considerable aptitude for it. But when Collis offered him management of the shipyards, Archer finally told him his heart wasn't in it and begged off. Hard-driving Collis, notorious for getting his own way at any cost, didn't hit the ceiling. Instead, he gently told Archer that all he wanted of him was that he do his best in whatever endeavors he might undertake.

From that time on, Collis' millions backed Archer's scholarly career and wide-spread philanthropies, which included founding fifteen museums and art galleries and assisting many others. Archer once said, "Wherever I put my foot down, a museum springs up."



Wolves, by Collis Huntington's daughter-in-law Anna Hyatt Huntington, mark entrance to the park, which is held as an undeveloped nature preserve.

Archer also became the devoted and encouraging husband of Anna Hyatt Huntington, who executed the heroic equestrian sculpture in Connecticut's Israel Putnam Memorial State Park. It was Archer and Anna who left Connecticut their beloved 873-acre rustic retreat in Redding, Bethel, and Newtown as a nature preserve to be called the Collis P. Huntington State Park, in memory of Archer's stepfather.

The story of the marriage of this talented and public-spirited couple is part of a forthcoming two-part article about Archer Huntington and Anna Hyatt Huntington, the amazing woman who was still creating sculptures a year before she died at the age of 97 and whose masterpieces are displayed in almost 200 museums and parks in America and abroad. ■

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water quality management

Thames River basin road salt study

Road salt application is a fact of winter life in New England. The driving public takes it for granted that most roads will be passable within hours of the end of a snow storm. In large part this is due to the tireless work of State and local road crews, many of whom work extra-long shifts when storms occur. However, a major factor in getting traffic moving, during and after a storm, is road salt application. Unfortunately, reversing an old saying, every silver lining has its cloud. Road salt use is no exception.

The paradox goes something like this. If salt were not applied during snow storms, the roads might be less safe, and the chance that traffic accidents (perhaps fatal ones) might occur increases. On the other hand, if salt is applied, the roads may be less hazardous, but the chance that the salt itself may cause certain types of environmental damage, the worst of which includes water supply contamination, increases.

Each year the municipalities in Connecticut spread an average of 100,000 tons of salt on their roadways. This ranges from a town average low of 0.6 tons per mile to a high of 23.1 tons per mile. The Connecticut Department of Transportation (Conn DOT) uses more than an additional 90,000 tons on State-maintained roads. A substantial amount of this material finds its way into the surface and ground waters, in some cases raising the sodium content above acceptable levels for people who must watch their salt intake.

The Connecticut 208 Program has been involved to some degree in this problem throughout its planning activities. In 1977 and 1978, the United States Geological Survey (USGS) produced mapped information for the State which identified the stratified-drift aquifers. These are large ground water formations which are suitable for public water supply. The USGS also mapped potential sources of contamination to these aquifers, including the location of road salt storage piles.

A more specific study is now beginning in the Thames River Drainage Basin. In a cooperative effort, the Northeastern Connecticut Regional Planning Agency, Southeastern Connecticut Regional Planning Agency, and the Windham Regional Planning Agency will examine the road salt contamination problem and recommend ways to reduce it. The project has four objectives:

1. A general overview of existing and potential ground and surface water supply contamination resulting from municipal road salt storage and application will be prepared.

2. For six of the towns in the basin (two per planning region) specific existing and potential road salt contamination problems will be identified for surface and ground water supplies.

3. Assistance will be given to towns in the basin which wish to correct storage and application problems.

4. A model guide for salt management will be developed which can be used by other communities in the State.

Although the three planning regions are the principal agents of this study, they will be working cooperatively with the Department of Environmental Protection, Department of Transportation, and the Department of Health Services, as well as local health departments. The local agencies are extremely important because they have statutory responsibility in the areas of water supply and health.

The RPA s will also contact public and private water company officials regarding ground and surface water supply contamination from road salt. In addition, they will be asked to provide information about their plans to construct new water supply facilities as well as the closing of existing ones. This will provide the RPAs with additional data and supplementary information regarding water supply needs.

Information will also be gathered from federal, State, and local agencies as well as the Salt Institute on proper salt storage and application techniques and methods to reduce water supply contamination. Selected ordinances and regulations pertaining to water supply protection will also be reviewed.

Once this information is compiled and evaluated, work will begin with local towns to improve salt storage and application. For example, merely covering salt piles and placing them on impervious pads can prevent much of the pollution that would have occurred if an open pile were allowed to be rained on. Calibrating the spreaders on trucks can result in more efficient use of salt. This not only protects water quality, but saves the town money as well.

The towns will also be supplied with the location of "sensitive areas" in relation to ground and surface water supplies. Special salt application and storage schemes can be developed for such areas.

In the long run, the wise and efficient use of road salt will benefit communities in three ways. Traffic flow can remain open during and after the winter storms. Towns can save money by wasting less salt. And the risk of water supply contamination from road salt will be reduced. It would be hard for anyone to not be pleased by that!

By Joseph M. Rinaldi,
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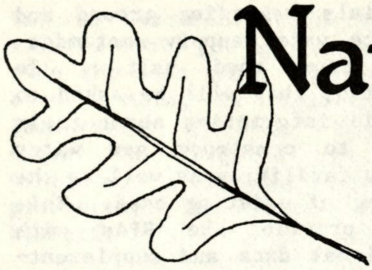
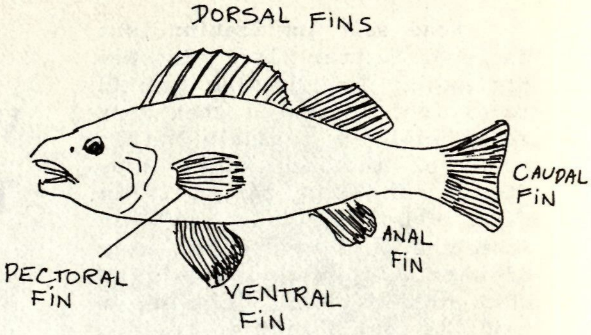


Nature Notes

by Penni Sharp



River life: the fish

In the March issue of the "Citizens' Bulletin," "Nature Notes" explored the world of rivers and streams -- the nature of the habitat and a few of the lower forms of the life that are found in swift-moving waters.

Of the higher forms of animal life that spend either all or parts of their lives in swift-moving fresh water, the one that comes quickest to mind is the fish. Fish are cold-blooded vertebrates that live in water throughout their lives. Instead of lungs, they are equipped with gills. Fish breathe by pumping water through their mouths so it passes over the gills and exits through openings behind the head. As water passes over the gills, oxygen is taken in and carbon dioxide given off. As can be inferred, the amount of dissolved oxygen present in a water body is critical to the survival of fish. Many fish species have an air bladder which functions primarily as a depth regulator, but which also can provide a supplemental source of air when necessary.

Fish have slimy skin that is covered with overlapping scales which function to waterproof the body and to reduce friction. This factor, combined with their streamlined bodies, makes fish perfectly adapted for aquatic life.

Fish move through the water propelled by the side-to-side motion of body and tail and the expulsion of water from the gill chambers. Also essential to their mobility are the fins, folds of skin with skeletal structures called fin rays. Fins allow fish to change direction and to regulate their swimming movements. There are two kinds of fins, paired and median. The paired fins are the pectoral and ventral and are used primarily for maneuvering and maintaining balance. The median fins are the dorsal, caudal, and anal fins. The caudal or tail fin is the one used for swimming, while the dorsal and anal fins function as keels. The foremost dorsal fin is often spiny and sometimes used in defense.

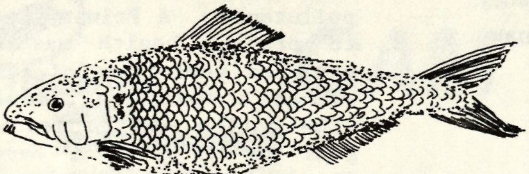
Fish vary in their breeding habits; however, most freshwater fishes are oviparous, meaning that they produce eggs that are expelled from the body prior to fertilization. As the eggs are laid, the male spreads "milt" (sperm-containing fluid) over them. Eggs may be laid singly or in masses. Some are attached to logs or rocks, others scattered loose in the water. Some fish make nests for the eggs. The nest may be abandoned after fertilization, or it may be guarded, usually by the male, until and sometimes throughout a period following the hatch.

Many fishes of rivers and streams migrate long distances at spawning time. Some appear in fresh water only to spawn, having made a long journey from the ocean. These fish are termed "anadromous." In Connecticut, two species of anadromous fish make their way into the Connecticut River to spawn, the Atlantic Salmon (Salmo salar) and the American shad (Alosa sapidissima).

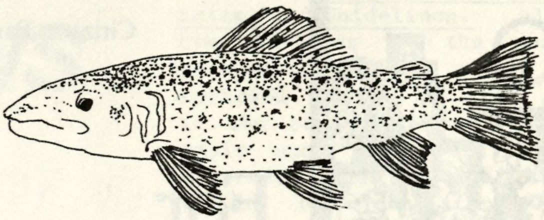
The Atlantic salmon begins its life in fresh water and spends from one to three years there prior to migrating to the sea. After a minimum of one year at sea, the salmon returns between February and June to its home stream to spawn. These trips upstream are known as "runs." Upon reaching their destination, the female salmon build nests. The eggs are laid and then deserted. Unlike Pacific Salmon, the Atlantic salmon do not die immediately after spawning. Although mortality may be high, a number of the Atlantic salmon return to the sea and may repeat the spawning journey a number of times.

Atlantic salmon vary in color throughout different stages in their lives. Young fish are brownish with red spots on the sides. When ready to leave the river for the sea the smolts, as they are then called, are dark bluish green above and silvery beneath. Adults at sea are dark above with silver sides which become black in females and red in the males prior to the spawning period.

During colonial days, the Atlantic Salmon was abundant from the Connecticut River north along the American coast. Dams built along the rivers spelled doom for these fish, and in the Connecticut River, natural salmon runs were no longer occurring in the early part of the 19th century. Since the 1960s, fish ladders and other types of passages have been constructed in the attempts to restore the Atlantic salmon to the Connecticut River. A cooperative restoration program begun in 1966 by the Connecticut River Basin states and federal fisheries agencies has met with significant success, and it is hoped that the Atlantic salmon will one day return in numbers to the Connecticut River. (See the Citizens' Bulletin, March 1981, for the latest on Atlantic Salmon restoration.)



American Shad



BROWN TROUT

The American shad is a member of the herring family. It has soft-rayed dorsal and anal fins, a forked tail fin, and relatively large scales. Shad are a bluish color above and have silvery sides. They also have a row of spots behind the gill cover.

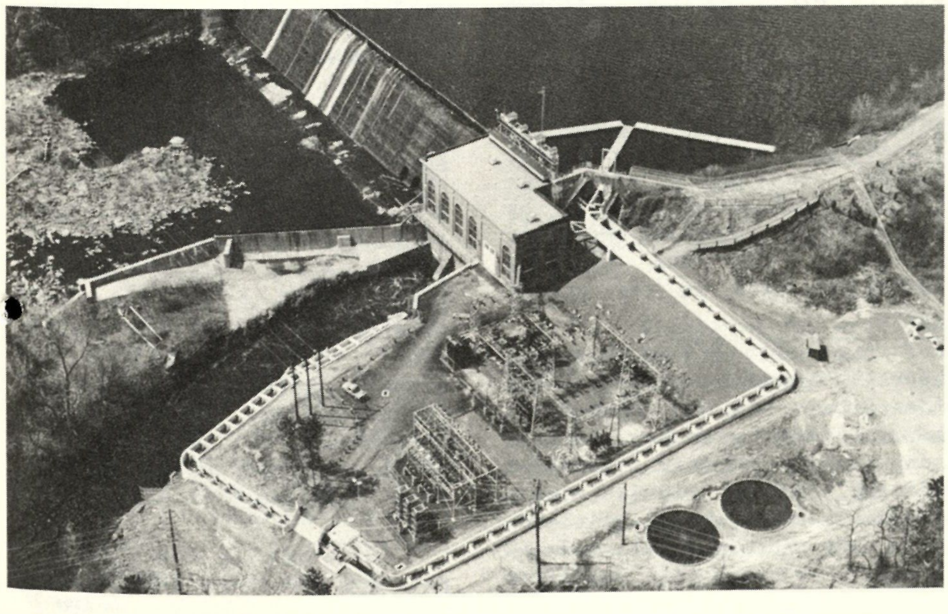
American shad begin life anytime between mid-May and mid-July in the stream in which the eggs were deposited. They feed on a variety of aquatic insects and on plankton, growing rapidly. During the fall, they leave fresh water to make their homes at sea. Studies of shad indicate that they stay close to the North Atlantic shoreline for their first two years and then migrate long distances to the mid-Atlantic via the Grand Banks. By the middle of their fourth or fifth year, they come close to shore off the Carolinas and begin to head north. In Connecticut, shad, once abundant in many streams, now ascend only the Connecticut River. Dams, polluted waters, and overfishing have brought the decline of this anadromous fish in Connecticut waters.

During April, the shad return to the river, males preceding females. A female lays up to 150,000 non-sticky, slowly-sinking eggs that hatch one week following fertilization.

Shad are highly prized for the roe as well as the flesh, and this fish is important to Connecticut's commercial fishery. It is also a valued game fish, and sport fishing for shad is pursued below the Enfield Dam on the Connecticut River. Sound management practices aim to ensure the continued presence of the American shad in Connecticut.

Perhaps the best known fish of Connecticut streams is the trout. Most of the trout that are present in our streams today are there because of stocking programs. Several species of trout can be found in our streams, including the native brook trout (Salvelinus fontinalis). Overall, this fish has light spots on a darkish body. It's back has irregular, worm-like markings. Lower fins are mottled and edged with white. Color can be quite variable, depending upon the nature of the stream bottom and upon the food source. Brook trout feed on a wide variety of invertebrates, chiefly insects and crustaceans. They will also prey on small fish and other vertebrates. Brook trout start a journey upstream around October, the males preceding the females. The female creates a nest in a riffle over a gravel bed and mates. The eggs take several weeks to hatch, the timing being somewhat controlled by temperature. The colder the water, the longer the time prior to hatch. Males may guard the nest for three weeks or so.

The 750-foot long fishway at the Rainbow Dam, opened in April 1976, allowed returning salmon to run on up the Farmington River.



Brook trout are cool water fish and are usually found in streams with a maximum temperature of 65° F., although they can survive in waters up to 75° F. They are a favorite game fish.

Brown trout (Salmo trutta) are also found in Connecticut streams. This trout is characterized by dark spots on a light body. They are yellow-brown with black, brown, and red spots, often blue-edged. Their lower fins are white to yellow. The brown trout spawns in the fall, running upstream to shallow waters. It breeds in a similar manner to the brook trout, but the nest is abandoned following fertilization. The brown trout is an introduced species, originating in Europe. It can survive in waters up to 80° F., but prefers cooler waters. In quieter, warmer waters, it will drive out brook trout.

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For Your Information

By Martina Delaney,
Citizens' Participation Coordinator

Legislating clean air

The following, written by Rebecca Davison, is reprinted from "Air & Land," A Quarterly Report from the Vermont Agency of Environmental Conservation Air and Solid Waste Program, November 1980.

Air, like water, has the ability to clean itself given enough time and the right environmental conditions. But when too much pollution enters the atmosphere too quickly, the natural cleansing processes break down. The consequences of disrupting this environmental system seriously threaten public health and welfare.

There is no longer any doubt that polluted air is a major factor contributing to respiratory disease and death from lung and heart ailments. Nor do many question the evidence that air pollution impairs visibility, erodes buildings, and damages vegetation.

The passage of the Air Pollution Control Act in 1955 was the first real recognition by Congress that the United States had to take nationwide action to clean up the air. The issue of states' rights and perception that air pollution was largely a local problem made the 1955 Act narrow in scope and potential.

By the mid-1960s the nation had learned that automotive exhaust was responsible for 50 percent of the national air pollution problem. Because there was no way for states to control this "mobile" pollution, Congress passed the 1965 Motor Vehicle Air Pollution Control Act which set national standards for automobile emissions.

The setting of these national standards made it more apparent that the 1955 Air Pollution Control Act, which allowed each state to set separate standards for industrial sources of pollution, created economic inequities and regulatory confusion.

By the end of the 1960s it was clear that a law controlling all air pollution sources -- mobile and stationary -- needed to be applied equally throughout the United States. In 1970 Congress passed the Clean Air Act -- a landmark in the struggle to clean up the nation's air.

For the first time national standards for clean air were set. These Ambient Air Quality Standards ("ambient" meaning outside, surrounding air) prescribed pollution limits by defining the principal types of pollutants and the maximium levels of each in the atmosphere.

The newly formed Environmental Protection Agency (EPA) identified six of the most harmful and prevalent pollutants: carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulates, hydrocarbons, and photochemical oxidants (ozone). Two separate standards were set for each of these pollutants. A Primary Standard to protect health was to be achieved regardless of cost and within a specified time limit. (The nation was to reach this goal by 1975.) A Secondary Standard was set for the general public welfare, i.e. to prevent damage to livestock, crops, buildings, and the like. The time schedule for reaching this standard was to be determined by the state and local governments.

To achieve the Ambient Air Quality Standards, Congress not only strengthened the restrictions on automobile emissions, but for the first time dealt on a national level with stationary sources of pollution -- power plant and factory smokestacks, industrial vents for gases and dust, coke, ovens, and incinerators.

The 1970 Act gave states the responsibility of determining how emissions from existing sources should be reduced in order to meet national standards. For selected categories of new industrial plants and for those that are substantially modified, EPA was to set emission limits. These New Source Performance (or Emission) Standards limited the maximum amount of each kind of pollutant (sulfur dioxide, particulates, hydrocarbons, etc.) that could be emitted from a new plant's stacks for each unit of the plant's production: heat input for a power station, tons of cement for a cement mill, etc.

National emission standards were also set for hazardous air pollutants -- mercury, cadmium, and asbestos -- and applied to new and existing plants.

Fines and criminal penalties for violation of state implementation plans, emission standards, and the like were tougher than under the earlier law. The Clean Air Act also allowed citizens to sue anyone, including the United States government, who was thought to be in violation of the performance standards.

Although the 1970 Clean Air Act was the most comprehensive

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Coastal Area Management
71 capitol avenue hartford, conn. 06115

CAM NEWS

How coastal management works

From "Will Your Coast Always Be There?" which was prepared by the League of Women Voters and funded by the League of Women Voters Education Fund and the Office of Coastal Zone Management. For copies of the complete brochure as well as other publications on coastal issues contact the Connecticut Coastal Area Management Program.

Is your town involved in Coastal Management?

It certainly is -- if you live in one of the following towns or districts: Branford, Bridgeport, Chester, Clinton, Darien, Deep River, East Haven, East Lyme, Essex, Fairfield, Fenwick, Greenwich, Groton (town), Groton (city), Groton Long Point, Guilford, Hamden, Ledyard, Lyme, Madison, Milford including Woodmont, Montville, New Haven, New London, Noank, North Haven, Norwalk, Norwich, Old Lyme, Old Saybrook, Orange, Preston, Shelton, Stamford, Stonington (town), Stonington (borough), Stratford, Waterford, Westbrook, West Haven, Westport.

Much of the responsibility for protecting and managing coastal resources rests with local agencies. These are the planning and zoning commissions and zoning boards of appeal which, for many years, have made decisions concerning land development for their towns. Now, under the Coastal Management law, these agencies also will be responsible for a special procedure called coastal site plan review. This evaluation is required for most development occurring within the coastal area.

What is the coastal area?

By law, coastal management takes place within the coastal area only. This is defined by a specific boundary, shown on a map which should be on file in your town clerk's office. Seaward, the boundary extends across Long Island Sound to the Connecticut-New York state line. Landward, the boundary is a continuous line which designates either the 100-year flood line, or 1,000 feet from mean high tide or from tidal wetlands, whichever is farthest inland. The law also permits local planning agencies to modify the basic boundary line to make it easier to determine if a specific property is within the coastal area. With this option, the boundary is composed of street and property lines. Your town may have drawn its coastal boundary in this manner.

How does coastal site plan review work?

Anyone wishing to modify or develop property must obtain permission from the local planning or zoning agency. If the property is located within the coastal area, then the planning and zoning permit process must include a coastal site plan review to protect coastal resources from any negative effects. Here, briefly, are the steps the reviewing commission must follow:

1. Receiving the application. This should show the layout and construction details of the project, including all coastal resources likely to be involved. The commission should review the application carefully to make sure that all necessary information has been submitted.

2. Using the Coastal Policies and Guidelines. All of the policies in the coastal management law should be reviewed to see if they apply to the project; ones which do apply must be carefully considered. The proposed project should be "consistent" with these policies.

3. Determining "adverse impacts." After reviewing the policies, the commission must decide if the development will cause harm to any coastal resource within or near the project. If the commission finds any "adverse impacts," the developer can modify the plan and then prove to the commission's satisfaction that any harmful impacts have been minimized.

4. Making the decision. If the commission is still not satisfied, it can deny the permit based upon a finding of "adverse impacts," or it can grant the permit with conditions. If it grants the permit, the commission must certify in writing that the project does not conflict with any coastal management policies and that all measures necessary to minimize harm to coastal resources will be taken.

What are some of the coastal policies?

Coastal management policies are divided into two groups: those designed to protect specific resources and those concerned with particular activities.

Resource policies deal with development impacts on coastal resources such as beaches, bluffs, rocky shores, tidal flats, and islands. For example, one of the policies for islands states that development should not interfere with their use as "critical habitats for those bird, plant and animal species which are indigenous to such islands or which are increasingly rare on the mainland." Consequently, only low-density, low-impact residential or recreational development should be allowed.

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Has your congressman heard any good fish stories lately?

Dear Sport Fisherman:

If you are concerned about the future of sport fishing in Connecticut, you now have an opportunity to make a significant contribution to the effort to protect and improve Connecticut's fisheries resources. The personal effort required is small, but necessary and effective. All that is required is for you to read this letter carefully and then let your convictions be known to Connecticut's Congressional delegation in Washington.

Legislation has recently been introduced into Congress which is commonly known as the D-J (Dingle-Johnson) Expansion Bill but more properly called the "Fish Restoration Act of 1981." In the U.S. Senate, it is referred to as S. 546 and in the House of Representatives as H.R. 2250. Originally passed in 1950, "The Federal Aid in Fish Restoration Act" (D-J Act), provides for federal aid for sport fish restoration by apportioning to the states the proceeds of the 10 percent excise tax on fishing rods, reels, creels and artificial baits, lures, and flies. The annual fund was approximately $30 million in 1980; some $280 million has been made available to the states since the program started. Increased demands on the resource and the erosive effects of inflation have placed the states under great financial stress with the result that necessary management, development and research programs cannot be accomplished. The D-J Expansion Bill will extend the 10 percent excise tax to other kinds of sport fishing tackle and place a three percent tax on boats, motors and trailers used primarily for sport fishing. This expansion will add approximately $70 million to the existing fund.

Monies from this fund are apportioned to the states based on area and license sales. The minimum apportionment is one percent of the total fund, with the maximum being five percent. As a minimum state, Connecticut now receives slightly more than $300,000 each year and could expect to receive nearly one million dollars with the passage of this bill. With the states matching share (75% federal-25% state funds), the D-J program in Connecticut could reach $1,250,000.

A review of our past and present D-J projects will indicate the benefits gained from this program by Connecticut sport fishermen. Nearly all boat launching sites in Connecticut have been purchased and developed under this program. Creel census projects have provided data which are the basis for our trout stocking policy. The Sea-run Brown Trout Study not only developed a trophy trout fishery in certain coastal streams but also provided our staff with technical information on the management of anadromous salmonids which has become invaluable in our Atlantic salmon program. Our knowledge and management capabilities in the marine area have been significantly increased by striped bass and bluefish projects. The creation of a northern pike fishery in Bantam Lake and the enhancement of the Connecticut River pike fishery were made possible by this program. Stream bank acquisition on the Willimantic River, Farmington River, Blackledge River and other rivers and streams was accomplished with D-J funds. The Fisheries Survey of Lakes and Ponds in Connecticut, a detailed physical, chemical and biological survey of Connecticut lakes and ponds, continues to provide necessary and useful information to biologists and sportsmen alike.

Recent and ongoing projects include the construction of the Rainbow Fishway on the Farmington River and the Leesville Fishway on the Salmon River, and the operation and maintenance of those facilities. Virtually our entire Atlantic salmon restoration program is being funded under this program, including the construction and operation of the Adult Salmon Holding Facility at Peoples Forest, the conversion of Kensington Hatchery to a salmon facility and the evaluation of salmon fry stocking in Sandy Brook. Of importance to bass fishermen in Connecticut is our five year, $500,000 Statewide Largemouth Bass Research and Management Project which is designed to develop a management program to enhance the trophy bass fishery. A recently approved, long range, comprehensive, marine recreational fishery project will provide data on the value and importance of marine recreational fishing in Long Island Sound and will provide management information for a range of marine species important to recreational fishermen.

At the present time ongoing projects will utilize nearly all of our annual D-J apportionment and yet there are a host of problems that are in desperate need of attention. Existing access and launching areas require continuing maintenance and potential sites await acquisition and development. Fishing piers and stream access points are priority programs without funds. The trout stocking program of the state must be justified with detailed physical, chemical and biological information on our rivers and streams. The population dynamics of important warm water fish such as smallmouth bass,

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CAM in action

From page 19

Use policies provide additional guidance if the activity being proposed is an especially critical one. There are policies for port and harbor development, for building of fuel and chemical storage tanks, and for boating and fishing facilities. As an example, the law states that any new storage tanks must be located inland -- if not reasonably possible, they must be located adjacent to existing storage facilities.

As you can see, much depends on how these policies and guidelines are used by local agencies. If they are carefully and thoughtfully used, coastal communities can do much to protect the coast from further abuse. The wise use of these policies is the key to a strong and successful coastal management program.

What if you own coastal property?

If you are a coastal property owner, you should be relieved that coastal management is here. It will protect your investment as well as protect the shoreline. Certainly, without adequate safeguards for the coast, all properties would eventually suffer.

Yes, coastal management does mean that you must meet certain requirements if you plan to develop your property. But it will not prevent you from developing your property -- instead, it will ensure that your development does not harm coastal resources. In general, any activity which normally requires approval by the planning and zoning commission, or zoning board of appeals, will require a coastal site plan review. For any requirements which may apply to you, consult your local commissions and determine your town's individual coastal management procedures.

However, if you are planning only simple modifications to your residence, it is likely that no special coastal mangement approvals will be needed. Most towns have enacted regulations, allowable under the law, which permit certain minor activities without coastal site plan review. Among these activities are small additions to existing residential dwellings, construction of fences, or erection of signs. In addition, single-family homes (if they are located 100 feet or more from tidal wetlands, beaches, or bluffs) may be exempted from the coastal site plan review requirements. Check your local regulations to see if these provisions have been enacted.

Where should you go for information or permits?

Your local building inspector should be able to tell you if a coastal permit is required. Also, each town has a "coastal management contact." If you need to know what application form is required or the nature of information needed for your application, the coastal management contact is a good source. If the coastal contact cannot help you directly, he or she can refer you to the proper source. ■

Federal clean air legislation

From page 18

air pollution control law the nation had yet enacted, many changes and refinements took place over the next seven years.

The lofty ideals of the 1970 law, written in vague and general language, left a lot of room for legal interpretation. As a result, the law bounced from courtroom to courtroom until the original intent was all but buried under piles of legal rhetoric.

One of the most important issues to emerge from this legal fray was the question of how to keep clean air areas of the country clean. Industry and EPA interpreted the 1970 law to mean that new pollution sources could enter clean air areas so long as the toal emissions did not violate the Ambient Air Quality Standards. Environmentalists objected, saying that the intent of the law was to protect the existing quality of the air which in most cases is cleaner than national standards. In a suit brought by the Sierra Club it was argued that the cleaner-than-standard areas should be protected from degradation. In 1973 the U.S. Supreme Court decided in favor of the Sierra Club and ordered EPA to develop regulations to "prevent the significant deterioration of the existing air quality."

EPA's Prevention of significant deterioration (PSD) regulation was based on the idea that there should be maximum allowable limits for increases in pollution over an area's existing, or baseline, pollution levels. How much of an increase in pollution was defined under a classification system: in Class I areas (wilderness or national parks) almost no change from existing air quality can take place; in Class II areas (most areas of the country) a moderate change can be allowed; and in Class III areas substantial industrial growth can occur. No area, however, can exceed the national standards.

Another issue which rose out of the hazy language of the 1970 law dealt with the problem of economic development in non-attainment, or "dirty air," areas. It appeared that under the Clean Air Act an area that was violating Ambient Air Quality Standards could not allow the construction of any new major sources of pollution, thus halting economic development. To deal with this problem, EPA in the late 1970s established an "offset" policy. Briefly, the policy said that a new source of pollution could be built in a non-attainment area if steps were taken to more than offset the new emissions by reducing pollution from existing sources. The objective was to continue to reduce a non-attainment area's air pollution and still allow economic growth.

By 1976 public pressure, missed deadlines, and general misinterpretation of the 1970 Act forced Congress to amend the law.

The 1977 Clean Air Act amendments not only embraced EPA's "offset" policy and the PSD regulations, but set new deadlines for state implementation plans (SIP) and called for their revision. (SIPs are the means by which each state achieves the national Ambient Air quality Standards.) Under the original Act states were to have achieved clean air by 1975 (1977 at the latest). However, when it became clear that many states were not going to met this deadline, Congress extended it to the end of December 1982.

To ensure that states moved ahead, revised SIPs were due by January 1, 1979. The revised document had to include, among other things: limitations on emissions from stationary sources, preconstruction review procedures for new sources, timetables for compliance by new and existing sources, pollution monitoring procedures, automobile emission inspection and maintenance programs, and transportation controls in nonattainment areas. Failure to submit this revised plan was subject to possible cuts in federal funding for highway or sewage plant construction.

The automobile industry also put pressure on Congress to change the 1970 Clean Air Act. The original intent of the law was to reduce automobile emissions by 90 percent over 1970-1971 model cars. Although the auto industry was producing cars for California that met or exceeded statutory standards, the automakers claimed they could not meet the nationwide deadline by the 1978 model year. Rather than risk substantial fines, they said they would shut down. Congress reacted by extending the industry deadline to 1982 but required in return more stringent emission control standards.

Despite these and other complex and difficult problems, the Clean Air Act is working. So much so that the Council on Environmental Quality was able to report in 1979, "A variety of indicators of air quality all point to the same conclusion; overall, the nation's air quality is improving." ■

Connecticut's river fish

From page 17

Fish and man have an important relationship, as fish have long been a source of food. Many of man's activities, however, have brought about serious declines in fish populations. Overfishing and pollution have threatened the survival of several species. Some land use practices such as road building, dam building, and deforestation have caused rivers and streams to deteriorate, sometimes to levels of quality so poor that fish cannot survive. Improvements in water quality since 1970 have allowed the return of fish to many streams once too polluted to support this form of life. ■

Support expanded fisheries funding

From page 20

pickerel and panfish must be investigated and integrated into management programs. With the termination of the anadromous fisheries grant program by the Administration in Washington, other funding sources must be developed to continue our shad monitoring program and to further develop and expand our salmon restoration effort.

The answer to these problems is money. The D-J Expansion Bill will provide the necessary funds. However, passage of this act will not be easy. The boating industry will not accept the fact that good fishing sells boats. Well financed boating industry organizations are lobbying strongly against the passage of this bill even though the potential increase in the price of boats used for fishing will surely be lost in the ongoing inflation spiral. (The cost of a canoe would increase about $7.00.) Sportsmen's organizations, professional groups and fishing tackle manufacturers supporting D-J expansion include: Bass Anglers Sportsman Society, Izaak Walton League, Federation of Fly Fishermen, American League of Anglers, Trout Unlimited, American Fisheries Society, National Wildlife Federation, Sport Fishing Institute and many others. This organizational support, however, must be complemented by an individual grass roots effort. In order to assure funds for necessary programs in Connecticut every concerned sportsman must act.

If you believe that the D-J program has enhanced and preserved your sport and that there is need to continue to expand these programs, please write a personal letter--and urge your friends to write. Supporting petitions and resolutions are important, but nothing impresses elected representatives more than sincere constituent mail. Just address your letter: Honorable (your Representative), House of Representatives, Washington, D.C. 20515, and Honorable (your Senator), United States Senate, Washington, D.C. 20510. Not only urge support of S. 546 and H.R. 2250 for the reasons I have described but also suggest that your Congressman co-sponsor these bills.

Act now! Five minutes of your time could mean a lot to all Connecticut anglers.

Thanks, and good fishing!

Sincerely,

Robert A. Jones
Chief of Fisheries

Travel

Again this summer the National Wildlife Federation offers a variety of back-to-nature vacations.

Six-day Conservation Summits will be held in the Blue Ridge Mountains of North Carolina (June 20-26), the Rocky Mountains of Colorado (July 9-15) and at Green Lake Winconsin (August 8-14). Recommended for families.

There will be a new program (four different sessions) of wilderness backpacking in the Blue Ridge Mountains for 13- to 17-year-olds. Four sessions of Ranger Rick Wildlife Camp (for nine- to 13-year-olds) will also be held in the Blue Ridge Mountains.

For information, write National Wildlife Federation, Dept. PI, 1412 16th Street N.W., Washington, DC 20036. ■

Fishing

Four Bridgeport Hydraulic Company public water supply reservoirs -- in Weston/Redding, Monroe, and two in Shelton -- will be open to anglers during fishing season on a company-issued permit basis (at a small fee for persons 16 to 65). Fishing (and also hiking) permits may be obtained at any BHC business office as well as at selected sporting goods stores.

Events

Sunday, May 24
The Quinnipiac River Watershed Association holds its second annual 6-mile canoe race from the Quinnipiac Street bridge, Wallingford, south to Banton Street area, North Haven. Race starts at 12:30 p.m. Register at starting line, 10:30-12:15. Entry fee, $4. Contact Kerry Heidenis, 265-2587. Last year's race drew 117 competitors.

Saturday, May 30
The new Chatfield Trail in Killingworth will be dedicated by the Connecticut Forest and Park Association with a walk starting at 9:30 a.m. Meet at entrance to Chatfield Hollow State Park, Killingworth, on Rt. 80, one mile west of intersection of Rts 80 and 81. Bring a pack lunch.

Saturday, June 6
A new trail in the Cockaponset State Forest will be dedicated by the Connecticut Forest and Park association at 1:30 p.m. An easy 3.54 mile walk will follow. Meet at commuter parking lot, Rt. 148 in Chester. Take exit 6 off Rt. 9.

Saturday, June 20
The Connecticut Audubon Center offers an 8 a.m. to 8 p.m. field trip to the New Alchemy Institute on Cape Cod. This small organization designs and tests food, energy and shelter systems that are environmentally safe and economically efficient. CAS member, $30; public, $45. Contact the center, 2325 Burr Street, Fairfield, CT 06430 (259-6305) for details or information on other programs.

Saturday & Sunday June 27-28
There will be a weekend of field dog trials for pointing breeds at John E. Flaherty Field Trial Area (off Rt.5 in East Windsor) sponsored by The Flaherty Management Committee (clubs that use the area). Free admission and parking. Obedience exhibition and field dog training class each day. Proceeds from entry fees will benefit grounds improvement fund. 9 a.m to 5 p.m., Saturday and Sunday.

Sunday, July 5
Take a walk in the Rhododendron Sanctuary of the Pachaug State Forest with Loraine Utter, curator at the Thames Science Center. Contact the center for information on this and other programs, 442-0391.

Public Hearings

May 20, 1981; 10 a.m.
Rm. 221, State Office Bldg., Hartford
To consider application of ABC Plumbing & Heating, Inc., to maintain existing fill and pavement within inland wetlands associated with an existing commercial development on the site located on the northwest corner of the Bayonet St., Hawthorne Drive intersection in New London.

May 26, 1981; 2. p.m.
Rm. 221, State Office Bldg., Hartford
To consider application of Libner Building in Darien to discharge 13,000 gallons per day of uncontaminated groundwater heat pump cooling water.

May 27,1981; 7 p.m.
Meriden City Hall,
142 East Main St., Rm. 206
To consider application of Fotomat Corporation which proposes to discharge 575,000 gallons per day of non-contact cooling waters to Willow Brook in the City of Meriden and to discharge 500,000 gallons per day of sanitary sewage, and pretreated and equalized wastewaters from film processing operations to the Meriden sanitary sewage system for treatment at the Meriden Sewage Treatment Plant prior to discharge to the Quinnipiac River.

May 28, 1981; 7:30 p.m.
Auditorium, Westbrook Jr.-Sr. High School, McVeagh Road, Westbrook
To consider the application of Gary Widlitz to construct and maintain a 300' x 5' pile and timber pier with a 15' x 10' "L", a 25' x 3' ramp, and a 20' x 6' floating dock extending 300' beyond mean high water into Long Island Sound at Westbrook.

June 3, 1981; 10 a.m.
Rm. 221, State Office Bldg., Hartford
To consider the application of Bass Plating Company to discharge 96,000 gallons per day of treated electroplating and metal finishing wastewaters to the Metropolitan District sanitary sewer at Bloomfield for conveyance to the sewage treatment plant and discharge to the Connecticut River in Hartford.

June 5, 1981; 10 a.m.
Rm. 221, State Office Bldg., Hartford
To consider application of the Town of Salisbury to discharge to Factory Brook, at outlet from Lake Wononscopomuc in the Town of Salisbury, treated hypolimnetic (bottom) water from Lake Wononscopomuc in an effort to correct nuisance algae conditions in the lake. Initial application is for 400,000 gallons per day. However, if operating data show that higher flows can be tolerated by the receiving stream, the permit will be so modified.

June 10, 1981; 10 a.m.
Rm. 221, State Office Bldg., Hartford
To consider application of The Rolfite Company to discharge 60,000 gallons per day of non-contact cooling water to the Housatonic River.

Permits Issued

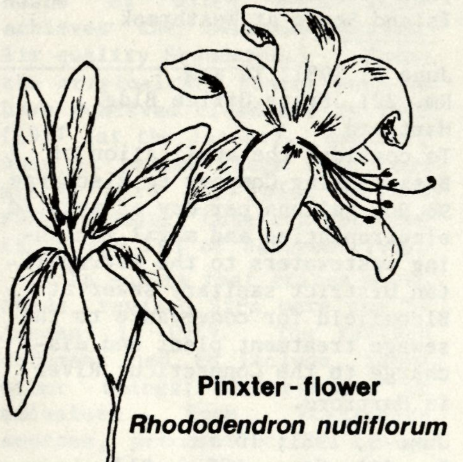
Water Compliance

11/6/80: Town of Vernon
To discharge to the Hockanum River an average daily flow of 6,400,000 gallons per day of wastewaters. Conditions.

11/6/80: The Color Place, Portland
To discharge to the Town of Portland sewerage system an average daily flow of 500 gallons per day of film developing wastewaters. Conditions.

Trailside Botanizing

by G. Winston Carter



Pinxter - flower

Rhododendron nudiflorum

Pam Carter

This lovely shrub is at the height of its beauty just before the laurel blossoms, and its flowering seems to accelerate the rapid sequence of early blooming flowers. It is found rather frequently in acid soils, in open woods and thickets, and sometimes in swamps and bogs. It is a rather common plant in the northeast.

The flower varies from pink to white, spreading out from a short, narrow tube into a showy blossom with long conspicuous stamens and pistil which curves upward. Pollination is carried out by honey bees and moths.

At times, an edible gall that is very tasty eaten fresh or pickled in vinegar can be found on the twigs and leaves of this shrub.

The pinxter-flower, or pink azalea, is a member of the heath family (Ericaceae). It belongs to the genus Rhododendron, a subdivision of the family. Rhododendrons make up nearly half of the plants found in the heath family. Of the 850 different kinds, about seventy are considered azaleas, the remainder being "rhododendrons." Both types may shed their leaves, but this is largely characteristic of the azaleas. Rhododendrons usually have 10 to 20 stamens (rarely five), while azaleas have five to 10.to 1[illegible]

Both rhododendrons and azaleas drop their petals after pollination has been completed. Rhododendrons usually have a more bell-shaped blossom which appears in many splendid colors. Azaleas are equally colorful but more frequently have flaring petals with flowers in loose clusters which often appear in such abundance that the shrub is almost hidden.

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State of Connecticut
Department of Environmental Protection
State Office Building
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